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DE/AFS/SF
Cover Sheet Form CS

DEQ AIR QUALITY PROGRAM
1410 N. Hilton, Boise, ID 83706
For assistance, call the
Air Permit Hotline – 1-877-5PERMIT

PERMIT TO CONSTRUCT APPLICATION

Revision 3
04/03/07

Please see instructions on page 2 before filling out the form.

DEQ USE ONLY	
Date Received	
<p>RECEIVED RECEIVED OCT - 4 2007 OCT - 4 2007 DEPARTMENT OF ENVIRONMENTAL QUALITY STATE AIR QUALITY DEPARTMENT OF ENVIRONMENTAL QUALITY STATE AIR QUALITY PROGRAM</p>	
Project Number	
Payment / Fees Included?	
Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Check Number	

COMPANY NAME, FACILITY NAME, AND FACILITY ID NUMBER

1. Company Name	Bennett Lumber Products, Inc.		
2. Facility Name	BLP Princeton	3. Facility ID No.	057-00008
4. Brief Project Description - One sentence or less	PTC modification to increase boiler PM-10 emission limit and increase throughput through facility limited by kiln throughput limit		

PERMIT APPLICATION TYPE

5. <input type="checkbox"/> New Facility	<input type="checkbox"/> New Source at Existing Facility	<input type="checkbox"/> Unpermitted Existing Source
<input checked="" type="checkbox"/> Modify Existing Source: Permit No.: Tier II/PTC No. T2-010208 Date Issued: 1/13/05		
<input checked="" type="checkbox"/> Required by Enforcement Action: Case No.: E-060014		
6. <input checked="" type="checkbox"/> Minor PTC	<input type="checkbox"/> Major PTC	

FORMS INCLUDED

Included	N/A	Forms	DEQ Verify
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Form GI – Facility Information	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Form EU0 – Emissions Units General 8	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Form EU1 – Industrial Engine Information Please Specify number of forms attached: _____	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Form EU2 – Nonmetallic Mineral Processing Plants Please Specify number of forms attached: _____	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Form EU3 – Spray Paint Booth Information Please Specify number of forms attached: _____	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Form EU4 – Cooling Tower Information Please Specify number of forms attached: _____	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Form EU5 – Boiler Information Please Specify number of forms attached: 1	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Form HMAP – Hot Mix Asphalt Plant Please Specify number of forms attached: _____	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Form CBP – Concrete Batch Plant Please Specify number of forms attached: _____	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Form BCE – Baghouses Control Equipment 1	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Form SCE – Scrubbers Control Equipment 1	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Forms EI-CP1 - EI-CP4 - Emissions Inventory- criteria pollutants (Excel workbook, all 4 worksheets)	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	PP – Plot Plan A BLP PP&T document	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Forms MI1 – MI4 – Modeling mi Form Model Source Details (Excel workbook, all 4 worksheets) BEST FILE	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Form FRA – Federal Regulation Applicability	<input type="checkbox"/>

COPY

Cover Sheet **Form CS**

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PERMIT TO CONSTRUCT APPLICATION

Revision 3
04/03/07

Please see instructions on page 2 before filling out the form.

COMPANY NAME, FACILITY NAME, AND FACILITY ID NUMBER

1. Company Name Bennett Lumber Products, Inc.
2. Facility Name BLP Princeton 3. Facility ID No. 057-00008
4. Brief Project Description - PTC modification to increase boiler PM-10 emission limit and increase throughput through facility limited by kiln throughput limit
One sentence or less

PERMIT APPLICATION TYPE

5. ☐ New Facility ☐ New Source at Existing Facility ☐ Unpermitted Existing Source
☒ Modify Existing Source: Permit No.: Tier II/PTC No. T2-010208 Date Issued: 1/13/05
☒ Required by Enforcement Action: Case No.: E-060014
6. ☒ Minor PTC ☐ Major PTC

FORMS INCLUDED

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<input checked="" type="checkbox"/>	<input type="checkbox"/>	Form EU5 – Boiler Information Please Specify number of forms attached: 1	<input type="checkbox"/>
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<input checked="" type="checkbox"/>	<input type="checkbox"/>	Form FRA – Federal Regulation Applicability	<input type="checkbox"/>

DEQ USE ONLY

Date Received

Project Number

Payment / Fees Included?

Yes ☐ No ☐

Check Number

Permit No.: P-2007.0107

Facility ID No.: 057-00008

PID: SSBG-T20P

Logged: ☒

RESUBMITTAL UPDATE



DEQ AIR QUALITY PROGRAM
1410 N. Hilton, Boise, ID 83706
For assistance, call the
Air Permit Hotline – 1-877-5PERMIT

PERMIT TO CONSTRUCT APPLICATION

Revision 3
03/26/07

Please see instructions on page 2 before filling out the form.

All information is required. If information is missing, the application will not be processed.

IDENTIFICATION

1. Company Name	Bennett Lumber Products
2. Facility Name (if different than #1)	BLP Princeton
3. Facility I.D. No.	057-00008
4. Brief Project Description:	PTC modification for increased boiler PM-10 emission rate and increased throughput controlled by kiln throughput limit. No new equipment.

FACILITY INFORMATION

5. Owned/operated by: (✓ if applicable)	<input type="checkbox"/> Federal government <input type="checkbox"/> County government <input type="checkbox"/> State government <input type="checkbox"/> City government
6. Primary Facility Permit Contact Person/Title	Jeff Abbott, Plant Engineer
7. Telephone Number and Email Address	208 875-1121, jeff@blpi.com
8. Alternate Facility Contact Person/Title	Chris Johnson, CJ Environmental, environmental consultant
9. Telephone Number and Email Address	208 628-4036, cjenv@hotmail.com
10. Address to which permit should be sent	Bennett Lumber Products, Inc. PO Box 130
11. City/State/Zip	Princeton, Idaho 83857
12. Equipment Location Address (if different than #10)	BLP plant S of Hwy 6
13. City/State/Zip	Princeton, Idaho 83857
14. Is the Equipment Portable?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
15. SIC Code(s) and NAISC Code	Primary SIC: 2421 Secondary SIC (if any): NAICS:
16. Brief Business Description and Principal Product	Sawmill producing dimensional lumber
17. Identify any adjacent or contiguous facility that this company owns and/or operates	None

PERMIT APPLICATION TYPE

18. Specify Reason for Application	<input type="checkbox"/> New Facility <input type="checkbox"/> New Source at Existing Facility <input type="checkbox"/> Unpermitted Existing Source <input checked="" type="checkbox"/> Modify Existing Source: Permit No.: Tier II/PTC No. T2-010208 Date Issued: 1/13/05 <input type="checkbox"/> Permit Revision <input type="checkbox"/> Required by Enforcement Action: Case No.:
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CERTIFICATION

IN ACCORDANCE WITH IDAPA 58.01.01.123 (RULES FOR THE CONTROL OF AIR POLLUTION IN IDAHO), I CERTIFY BASED ON INFORMATION AND BELIEF FORMED AFTER REASONABLE INQUIRY, THE STATEMENTS AND INFORMATION IN THE DOCUMENT ARE TRUE, ACCURATE, AND COMPLETE.

19. Responsible Official's Name/Title	Frank Bennett, Owner	
20. RESPONSIBLE OFFICIAL SIGNATURE		Date: 10/2/2007
21. <input checked="" type="checkbox"/> Check here to indicate you would like to review a draft permit prior to final issuance.		

**Permit To Construct (PTC) Application
For Modifications to the Bennett Lumber Products, Inc. air permit**

This package provides an application for a Permit To Construct prepared consistent with IDEQ guidance. This application fulfills BLP's requirements under an IDEQ Consent Order signed April 13 by IDEQ after BLP's earlier concurrence.

All materials required for a complete application are included on the accompanying CD, as per IDEQ and IDAPA guidance. The CD includes a completeness checklist verifying all required information is included. The text below also documents pre-application meetings and discussions with IDEQ to ensure that this application is complete, accurate, and follows IDEQ guidance.

We have tried aggressively to define IDEQ requirements and meet them to the letter. Please communicate with us during permit review if there is any question about completeness!!

BLP 0907 Application details

- From Per pre-application meeting w/IDEQ: Forms included are CS, GI, CYS for each cyclone, EU0 for each kilns and one for fugitives, EU5, BCE, SCE, PP, FRA. Tier 1 source forms were provided to duplicate EU forms. The emission inventory provides detailed information on planned operations and emission calculations
 - CYS without measurements, defining manufacturer, model, size, and measured flow rates
 - EU0 for stacks, not elsewhere
 - One for each kilns
 - 1 summary for fugitives,
 - Excel EI will document fugitive calcs
 - BCE will reference cyclones, which use IDEQ EF for Wood Products Industry for cyclones with baghouse
 - SCE will say source test shows controlled emissions
 - Plot plan requirement in PP form met by:
 - 2 part detailed facility-wide plot plan PP3E and PP3W
 - Model figures PP1 (facility-wide depiction of property boundary, buildings, and sources) and PP2 (zoom in on model layout of buildings and sources), each on a UTM coordinate system
 - Difficulties with IDEQ MI and EI-CP spreadsheets were documented to IDEQ. Mary Anderson provided written approval to submit that information via alternative spreadsheets
 - EI information is on BLP 0907 EI.xls
 - Modeling data is in zipped modeling files, including on the BEEST modeling file and model and output files, and on the Model Source data spreadsheet, as well as in draft in the IDEQ approved modeling protocol and in final in the modeling report
 - IDEQ form programming left only limited # of characters, forcing abbreviations and acronyms. Acronyms are translated on the first worksheet in the emission inventory spreadsheet

- IDEQ CE form wouldn't allow entry for number of boiler forms
 - 1 set is provided for the 1 facility boiler
 - IDEQ CYS forms would not allow entries for manufacturer or process description
 - Manufacturer info in model slot, along with model info
 - Process description elsewhere of CYS form, in process flow diagram and/or EI
- This application is postmarked on or close to September 28 2007 from Princeton, Idaho, more promptly in response to IDEQ final comments than the time IDEQ took to make those comments or recommendations
 - The permit application fee was paid with the June, 2007 initial submittal.
- No summary document is required. This document provides supporting information including requested permit conditions and documentation to support required application details
 - Enclosed emission inventory (BLP 0907 EI.xls) shows total HAP emissions are below major source threshold therefore, no Boiler MACT. This application requests a permit HAP emission limit anyway, to be safe in case of future different interpretation of HAP emission factors or PTE
- **Air quality modeling**
 - All modeling was performed consistent with an IDEQ approved modeling protocol. That protocol and the IDEQ approval letter are included on the CD with this application package
 - Zipped AQ modeling files sufficient to duplicate the modeling analysis are included on the CD
- The **PTC Application Completeness Checklist** included documents that all application requirements are included
 - A process flow diagram with throughputs at each step is included in the file BLP Process flow Diagram.doc
 - Process flow and process descriptions remains unchanged from previously submitted information, except:
 - Process Description document included to describe how the proposed permit action would differ from currently permitted actions
 - Minor enhancements to the flow diagram for material flow to boiler and to correct P21 to Target Box
 - Throughput volumes increase, while maintaining material balance

Requested Permit Conditions

- **The issued permit be a PTC, not a PTC / Tier II combination**
 - The PTC under IDAPA 200 regulations will serve the purposes of setting permit requirements and emission limits. Adding in a Tier II component under IDAPA 400 wouldn't enhance enforceability in any way, but would include unnecessary renewal requirements and costs for BLP

- The emissions from the boiler can be addressed via a PTC because the condition setting them is listed as a PTC condition in section 3.1 of the PTC / Tier 2 combo permit T2-010208
 - The emissions from the kiln, and all other emissions, can be addressed via a PTC because they were set in a PTC P-050206 issued in October, 2005
 - All these emission factors were initially set in the facility's initial PTC in 2001 or earlier
- **Throughput through the kilns be limited to 157895 MMbf**
 - The facility-wide EI and modeled values are consistent with that throughput.
 - This effectively limits throughput through all other facility processes
 - All throughputs and emission rates in the emission inventory are consistent with this kiln throughput
- **Permit language structured so that shavings cyclones 11, 12, and 13 can each be replaced with cyclones, or cyclone baghouse combinations that are at least as effective in controlling emissions without requiring subsequent permit action**
 - Any new cyclone would use the same emission factor as the existing cyclones, the 0.2 lbs PM and 0.16 lbs PM-10 per bone dry ton for shavings through cyclones in the IDEQ Emission Factors for the Wood Products Industry document. That is the only emission factor IDEQ recommends for a cyclone processing shavings, except for a decrease of two orders of magnitude if a baghouse is added.
 - In actuality, the cyclones would only be replaced with a better sized cyclone, or more likely, with a system that includes a baghouse processing their exhausts. In either case, actual cyclone emissions would be lower than current and permitted levels. If a baghouse or baghouses are added, no credit will be taken for the emission reductions in this PTC.
- **The facility requests a HAP emission limit of 24 tons per year cumulative HAPs, and 9 tons per year for an individual HAP**
 - From EPA and IDEQ, that translates to an effective limit of 24.49999 tons/yr cumulative and 9.49999 tons/yr of an individual HAP based upon rounding to the nearest integral value consistent with the regulation.
- **All aspects of this permitting action should be included in the Facility's Tier 1 permit application renewal.**
 - That application was declared complete in 2005. IDEQ processing was suspended in 2006 pending resolution of IDEQ concerns with the boiler source test. This permit action should complete resolution of thus issues
 - Review of this PTC application should not be included in IDEQ Title V "Fee for Services" billing

Operating Permit Renewal

- BLP requests that processing of the Operating Permit be reinitiated when the IDEQ review of this application is being completed.
- A refined CAM plan was submitted in August 2007
- BLP understands that IDEQ has billed aggressively on that renewal without any action to date, so would expect prompt Operating Permit action with limited additional billing
- BLP requests that the Operating Permit be effective five years from the date it is issued, rather than again be asked to prepare another application right after the permit is issued

Submitted Files List

This document identifies the files included in the electronic submission of the BLP 09/07 PTC application. All these files are submitted on a single disk. If the IDEQ reviewer does not see the disk or any files listed here, please contact Chris Johnson (208 628-4036 or cjenv@hotmail.com) or Jeff Abbott (208 875-1121 or jeff@blpi.com).

The files contained on the CD submittal include:

Main Directory

Bennett 0907 AQ modeling report.doc	939 KB	9/23/2007 09:53:22 AM	a
BLP Process Flow Diagram.doc	363 KB	9/23/2007 09:29:36 AM	a
BLP 0907 AQ Modeling Files.zip	7068 KB	9/3/2007 08:25:12 AM	a
BLP 0907 PTC process descriptio...	24 KB	9/22/2007 10:05:14 AM	a
BLP EI 0907.xls	201 KB	9/23/2007 09:11:04 AM	a
BLP Permit Application Overview...	40 KB	9/24/2007 11:43:42 AM	a
BLP PP1 Model facility layout.jpg	59 KB	4/23/2007 09:29:02 AM	a
BLP PP2 Model facility sources.jpg	51 KB	4/23/2007 09:23:30 AM	a
BLP PP3E east side.jpg	546 KB	5/30/2007 09:08:56 AM	a
BLP PP3W W side.jpg	442 KB	5/30/2007 09:08:16 AM	a
BLP ptc_checklist_completeness_...	76 KB	9/23/2007 09:55:02 AM	a
drykilnmemo050907.doc	225 KB	7/20/2007 01:36:26 PM	a
MI form Model Source Data.xls	24 KB	9/20/2007 08:00:40 AM	a
ODEQ AQ-EF02.pdf	24 KB	3/5/2007 10:10:04 AM	a
Submitted Files List.doc	33 KB	9/24/2007 3:30:04 PM	a

Subirectory 2007 IDEQ Permit Forms

BLP ptc_form_BCE_P24.doc	303 KB	9/22/2007 08:52:54 AM	a
BLP ptc_form_CS.doc	289 KB	9/22/2007 08:54:16 AM	a
BLP ptc_form_CYS_P11.doc	326 KB	9/22/2007 09:30:02 AM	a
BLP ptc_form_CYS_P12.doc	327 KB	9/22/2007 09:28:12 AM	a
BLP ptc_form_CYS_P13.doc	327 KB	9/22/2007 09:27:36 AM	a
BLP ptc_form_CYS_P14.doc	327 KB	9/22/2007 09:35:36 AM	a
BLP ptc_form_CYS_P6 and P24.doc	327 KB	9/23/2007 08:26:04 AM	a
BLP ptc_form_EU0_fugitives.doc	301 KB	9/22/2007 10:20:12 AM	a
BLP ptc_form_EU0_P15 kiln1.doc	300 KB	9/22/2007 09:46:00 AM	a
BLP ptc_form_EU0_P16 kiln2.doc	300 KB	9/22/2007 09:47:56 AM	a
BLP ptc_form_EU0_P17 kiln3.doc	300 KB	9/22/2007 09:47:30 AM	a
BLP ptc_form_EU0_P18 kiln4.doc	300 KB	9/22/2007 09:55:00 AM	a
BLP ptc_form_EU0_P19 kiln5.doc	300 KB	9/22/2007 09:55:10 AM	a
BLP ptc_form_EU0_P20 kiln6.doc	300 KB	9/22/2007 09:57:14 AM	a
BLP ptc_form_EU0_P25 kiln7.doc	300 KB	9/22/2007 09:54:18 AM	a
BLP ptc_form_EU5_boiler.doc	295 KB	9/22/2007 09:57:28 AM	a
BLP ptc_form_FRA.doc	261 KB	5/30/2007 08:47:36 AM	a
BLP ptc_form_GI.doc	283 KB	9/22/2007 09:59:20 AM	a
BLP ptc_form_SCE_0907.doc	293 KB	6/5/2007 11:02:32 AM	a

Subdirectory Protocol Agreements and BLP Response to IDEQ Comments

090507 pre-application meeting ...	30 KB	9/5/2007 02:19:44 PM	a
Bennett 0907 AQ modeling protoc...	784 KB	9/5/2007 12:01:04 PM	a
BennettLumberPrincetonSept42007...	34 KB	9/19/2007 03:06:24 PM	a
BLP Permit Modeling Protocols a...	33 KB	9/23/2007 09:13:44 AM	a
P-2007[1][1].0107.APP.DEQComple...	41 KB	9/21/2007 08:15:54 PM	a
Permit application completeness...	28 KB	9/6/2007 03:26:06 PM	a

Subdirectory **Title V Emission Source Forms**

AIRS P11.xls	28 KB	9/23/2007 08:38:08 AM	a
AIRS P12.xls	28 KB	9/23/2007 08:42:32 AM	a
AIRS P13.xls	28 KB	9/23/2007 08:44:06 AM	a
AIRS P14.xls	28 KB	9/23/2007 08:45:06 AM	a
AIRS P15.xls	29 KB	9/23/2007 08:53:48 AM	a
AIRS P16.xls	29 KB	9/23/2007 08:53:24 AM	a
AIRS P17.xls	29 KB	9/23/2007 08:53:02 AM	a
AIRS P18.xls	30 KB	9/23/2007 08:52:36 AM	a
AIRS P19.xls	29 KB	9/23/2007 08:54:52 AM	a
AIRS P20.xls	29 KB	9/23/2007 08:55:52 AM	a
AIRS P24.xls	29 KB	9/23/2007 09:02:50 AM	a
AIRS P25.xls	29 KB	9/23/2007 08:58:04 AM	a
AIRS P6.xls	28 KB	9/23/2007 08:33:04 AM	a
AIRS P7.xls	28 KB	9/23/2007 08:35:52 AM	a

The file dates were accurate as of the start of assembly of the application package septemebr 24, 2007. A few files on the CD may have dates on or after September 24 rather than those listed. The file names should generally be self-identifying. The application text identifies most of the main ones. Please contact Mr. Johnson or Mr. Abbott if you have any questions.



Department of Environmental Quality - Air Quality Division

Minor Source Permit to Construct Application Completeness Checklist

This checklist is designed to aid the applicant in submitting a complete permit to construct application.

I. Actions Recommended Before Submitting Application

- ☒ Refer to the Rule. Read the Permit to Construct requirements contained in IDAPA 58.01.01.200-228, Rules for the Control of Air Pollution in Idaho. The Rules are available on DEQ's website (go to <http://adm.idaho.gov/adminrules/rules/idapa58/0101.pdf>).
- ☒ Refer to DEQ's Permit to Construct Guidance Document. DEQ has developed a guidance document to aid applicants in submitting a complete permit to construction application. The guidance document is located on DEQ's website (go to http://www.deq.idaho.gov/air/permits_forms/permitting/ptc_prepermit_guidance.pdf).
- ☒ Consult with DEQ Representatives. It is recommended that the applicant consult with DEQ to discuss application requirements before submitting the permit to construct application. The consultation can be in person or on the phone. Contact DEQ's Air Quality Hotline at **877-5PERMIT** to schedule the consultation.
- ☒ Submit Ambient Air Quality Modeling Protocol. It is required that an ambient air quality modeling protocol be submitted to DEQ at least two (2) weeks before the permit to construct application is submitted. Contact DEQ's Air Quality Hotline at **877-5PERMIT** for information about the protocol.

II. Application Content

Application content should be prepared using the checklist below. The checklist is based on the requirements contained in IDAPA 58.01.01.202.

- ☒ Apply for a Permit to Construct. Submit a Permit to Construct application using forms available on DEQ's website at http://www.deq.idaho.gov/air/permits_forms/forms/ptc_general_application.pdf.
- ☒ Permit to Construct Application Fee. The permit to construct application fee must be submitted at the time the original pre-permit construction approval application is submitted. Refer to IDAPA 58.01.01.224.
- ☒ Process Description(s). The process or processes for which construction is requested must be described in sufficient detail and clarity such that a member of the general public not familiar with air quality can clearly understand the proposed project. A process flow diagram is required for each process for which pre-permit construction approval is requested.
- ☒ Equipment List. All equipment that will be used for which construction is requested must be described in detail. Such description includes, but is not limited to, manufacturer, model number or other descriptor, serial number, maximum process rate, proposed process rate, maximum heat input capacity, stack height, stack diameter, stack gas flowrate, stack gas temperature, etc. All equipment that will be used for which construction is requested must be clearly labeled on the process flow diagram.
- ☒ Potential to Emit. Submit the uncontrolled potential to emit (pre-control equipment emissions estimates) and the controlled potential to emit (post-control equipment emissions estimates) for all equipment for which construction is requested. Any limit on the equipment for which is construction is requested may become a limit on that equipment in the permit to construct.
- ☒ Potential to Emit and Modeled Ambient Concentration for All Regulated Air Pollutants. All proposed emission limits and modeled ambient concentrations for all regulated air pollutants must demonstrate compliance with all applicable air quality rules and regulations. Regulated air pollutants include criteria air pollutants, toxic air pollutants listed pursuant to IDAPA 58.01.01.585 and 586, and hazardous air pollutants listed pursuant to



Section 112 of the 1990 Clean Air Act Amendments (go to <http://www.epa.gov/ttn/atw/188polls.html>). Describe in detail how the proposed emissions limits and modeled ambient concentrations demonstrate compliance with each applicable air quality rule and regulation. It is requested that emissions calculations, assumptions, and documentation be submitted with sufficient detail so DEQ can verify the validity of the emissions estimates.

- ☒ Scaled Plot Plan. It is required a scaled plot plan be included in the permit to construct application and must clearly label the location of each proposed process and the equipment that will be used in the process.
- ☒ List all Applicable Requirements. All applicable requirements must be cited by the rule or regulation section/subpart that applies for each emissions unit.
- ☒ Certification of Permit to Construct Application. The permit to construct application must be signed by the Responsible Official and must contain a certification signed by the Responsible Official. The certification must state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete. Refer to IDAPA 58.01.01.123.
- ☒ Submit the Permit to Construct Application. Submit the permit to construct application and processing fee to the following address:

Air Quality Program Office – Application Processing
Department of Environmental Quality
1410 N. Hilton
Boise, ID 83706-1255

BLP 0907 PTC application

Process description

Process Description

In the 0907 PTC application, the facility does not propose any new equipment or processes. The application simply requests increased throughputs through the existing permitted sawmill, dry kiln, and planer and all associated operations, and an increase in allowable particulate emission rate from the boiler. BLP estimates that the 50% increase in throughput can be accomplished with a 30% increase in operating hours and enhanced utilization and efficiency.

The equipment forms enclosed document the equipment permitted and the proposed throughputs. The enclosed process flow diagram documents how the processes are coordinated at the facility. The emission inventory documents proposed emissions facility-wide. The attached modeling analysis documents the facility's compliance with all applicable impact limits.

**Permit To Construct (PTC) Application
For Modifications to the Bennett Lumber Products, Inc. air permit**

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 - Plot plan requirement in PP form met by:
 - 2 part detailed facility-wide plot plan PP3E and PP3W
 - Model figures PP1 (facility-wide depiction of property boundary, buildings, and sources) and PP2 (zoom in on model layout of buildings and sources), each on a UTM coordinate system
 - Difficulties with IDEQ MI and EI-CP spreadsheets were documented to IDEQ. Mary Anderson provided written approval to submit that information via alternative spreadsheets
 - EI information is on BLP 0907 EI.xls
 - Modeling data is in zipped modeling files, including on the BEEST modeling file and model and output files, and on the Model Source data spreadsheet, as well as in draft in the IDEQ approved modeling protocol and in final in the modeling report
 - IDEQ form programming left only limited # of characters, forcing abbreviations and acronyms. Acronyms are translated on the first worksheet in the emission inventory spreadsheet

- IDEQ CE form wouldn't allow entry for number of boiler forms
 - 1 set is provided for the 1 facility boiler
 - IDEQ CYS forms would not allow entries for manufacturer or process description
 - Manufacturer info in model slot, along with model info
 - Process description elsewhere of CYS form, in process flow diagram and/or EI
- This application is postmarked on or close to September 28 2007 from Princeton, Idaho, more promptly in response to IDEQ final comments than the time IDEQ took to make those comments or recommendations
 - The permit application fee was paid with the June, 2007 initial submittal.
- No summary document is required. This document provides supporting information including requested permit conditions and documentation to support required application details
 - Enclosed emission inventory (BLP 0907 EI.xls) shows total HAP emissions are below major source threshold therefore, no Boiler MACT. This application requests a permit HAP emission limit anyway, to be safe in case of future different interpretation of HAP emission factors or PTE
- **Air quality modeling**
 - All modeling was performed consistent with an IDEQ approved modeling protocol. That protocol and the IDEQ approval letter are included on the CD with this application package
 - Zipped AQ modeling files sufficient to duplicate the modeling analysis are included on the CD
- The **PTC Application Completeness Checklist** included documents that all application requirements are included
 - A process flow diagram with throughputs at each step is included in the file BLP Process flow Diagram.doc
 - Process flow and process descriptions remains unchanged from previously submitted information, except:
 - Process Description document included to describe how the proposed permit action would differ from currently permitted actions
 - Minor enhancements to the flow diagram for material flow to boiler and to correct P21 to Target Box
 - Throughput volumes increase, while maintaining material balance

Requested Permit Conditions

- **The issued permit be a PTC, not a PTC / Tier II combination**
 - The PTC under IDAPA 200 regulations will serve the purposes of setting permit requirements and emission limits. Adding in a Tier II component under IDAPA 400 wouldn't enhance enforceability in any way, but would include unnecessary renewal requirements and costs for BLP

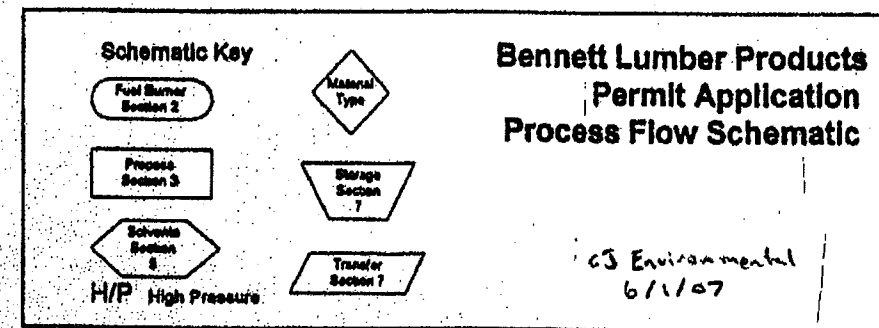
- The emissions from the boiler can be addressed via a PTC because the condition setting them is listed as a PTC condition in section 3.1 of the PTC / Tier 2 combo permit T2-010208
 - The emissions from the kiln, and all other emissions, can be addressed via a PTC because they were set in a PTC P-050206 issued in October, 2005
 - All these emission factors were initially set in the facility's initial PTC in 2001 or earlier
- **Throughput through the kilns be limited to 157895 MMbf**
 - The facility-wide EI and modeled values are consistent with that throughput.
 - This effectively limits throughput through all other facility processes
 - All throughputs and emission rates in the emission inventory are consistent with this kiln throughput
- **Permit language structured so that shavings cyclones 11, 12, and 13 can each be replaced with cyclones, or cyclone baghouse combinations that are at least as effective in controlling emissions without requiring subsequent permit action**
 - Any new cyclone would use the same emission factor as the existing cyclones, the 0.2 lbs PM and 0.16 lbs PM-10 per bone dry ton for shavings through cyclones in the IDEQ Emission Factors for the Wood Products Industry document. That is the only emission factor IDEQ recommends for a cyclone processing shavings, except for a decrease of two orders of magnitude if a baghouse is added.
 - In actuality, the cyclones would only be replaced with a better sized cyclone, or more likely, with a system that includes a baghouse processing their exhausts. In either case, actual cyclone emissions would be lower than current and permitted levels. If a baghouse or baghouses are added, no credit will be taken for the emission reductions in this PTC.
- **The facility requests a HAP emission limit of 24 tons per year cumulative HAPs, and 9 tons per year for an individual HAP**
 - From EPA and IDEQ, that translates to an effective limit of 24.49999 tons/yr cumulative and 9.49999 tons/yr of an individual HAP based upon rounding to the nearest integral value consistent with the regulation.
- **All aspects of this permitting action should be included in the Facility's Tier 1 permit application renewal.**
 - That application was declared complete in 2005. IDEQ processing was suspended in 2006 pending resolution of IDEQ concerns with the boiler source test. This permit action should complete resolution of thus issues
 - Review of this PTC application should not be included in IDEQ Title V "Fee for Services" billing

Operating Permit Renewal

- BLP requests that processing of the Operating Permit be reinitiated when the IDEQ review of this application is being completed.
- A refined CAM plan was submitted in August 2007
- BLP understands that IDEQ has billed aggressively on that renewal without any action to date, so would expect prompt Operating Permit action with limited additional billing
- BLP requests that the Operating Permit be effective five years from the date it is issued, rather than again be asked to prepare another application right after the permit is issued

BARK-43.0%
HOG FUEL-43.0%
CHIPS-47%
SAWDUST-47%
SHAVINGS-11.1%

157895 MB4



Handwritten numbers provide updates consistent with 6/07 Permit Application. Permit Application also includes 2007 values started with 2% increase from previous values, then adjusted to reflect onsite operations verified from annual data and a site visit. Subtle changes in routing of boiler fuel from previous permit flow diagrams.

All units BDT, unless otherwise stated.

8 Miles to Highway 95 Junction

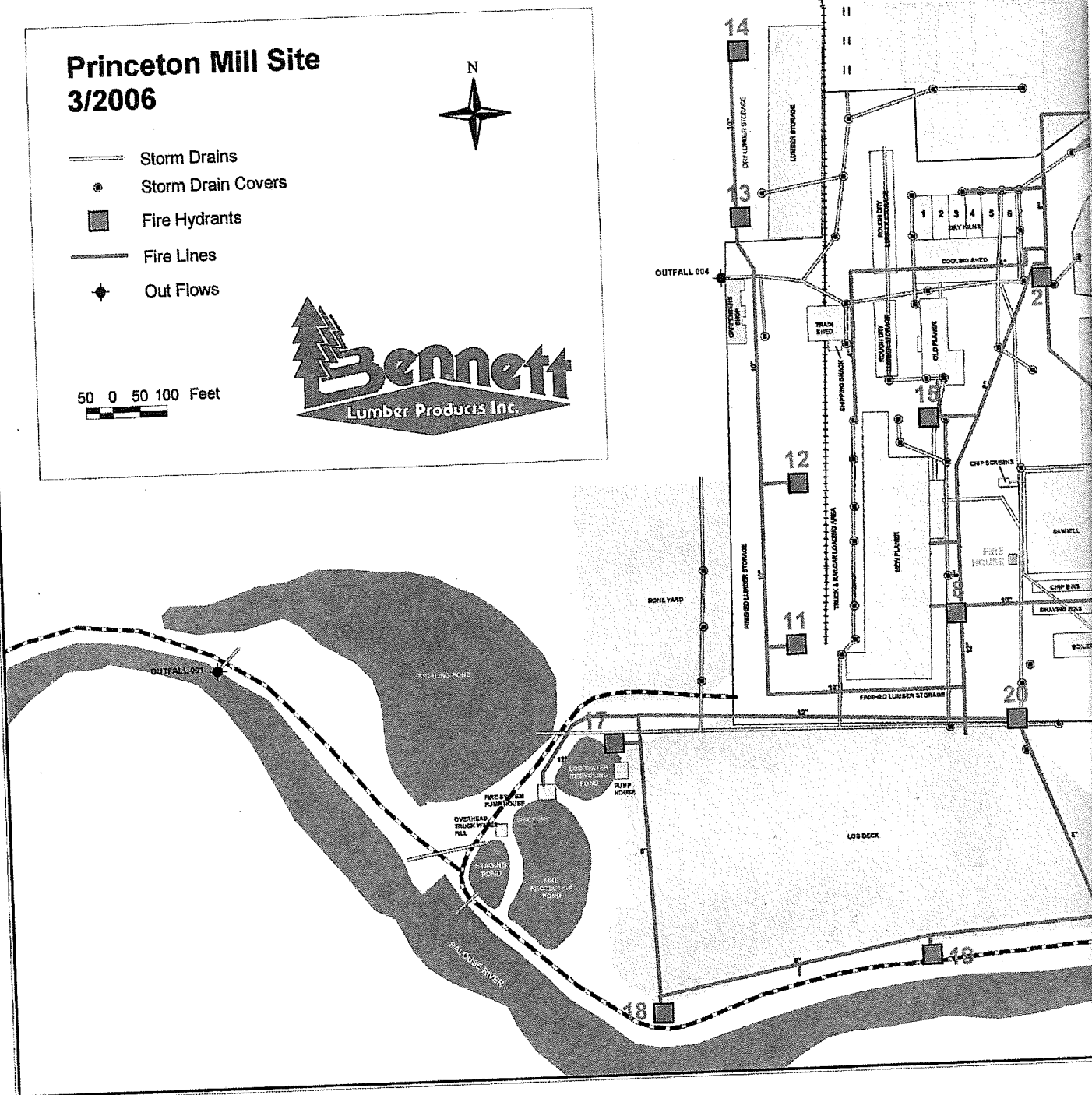
6

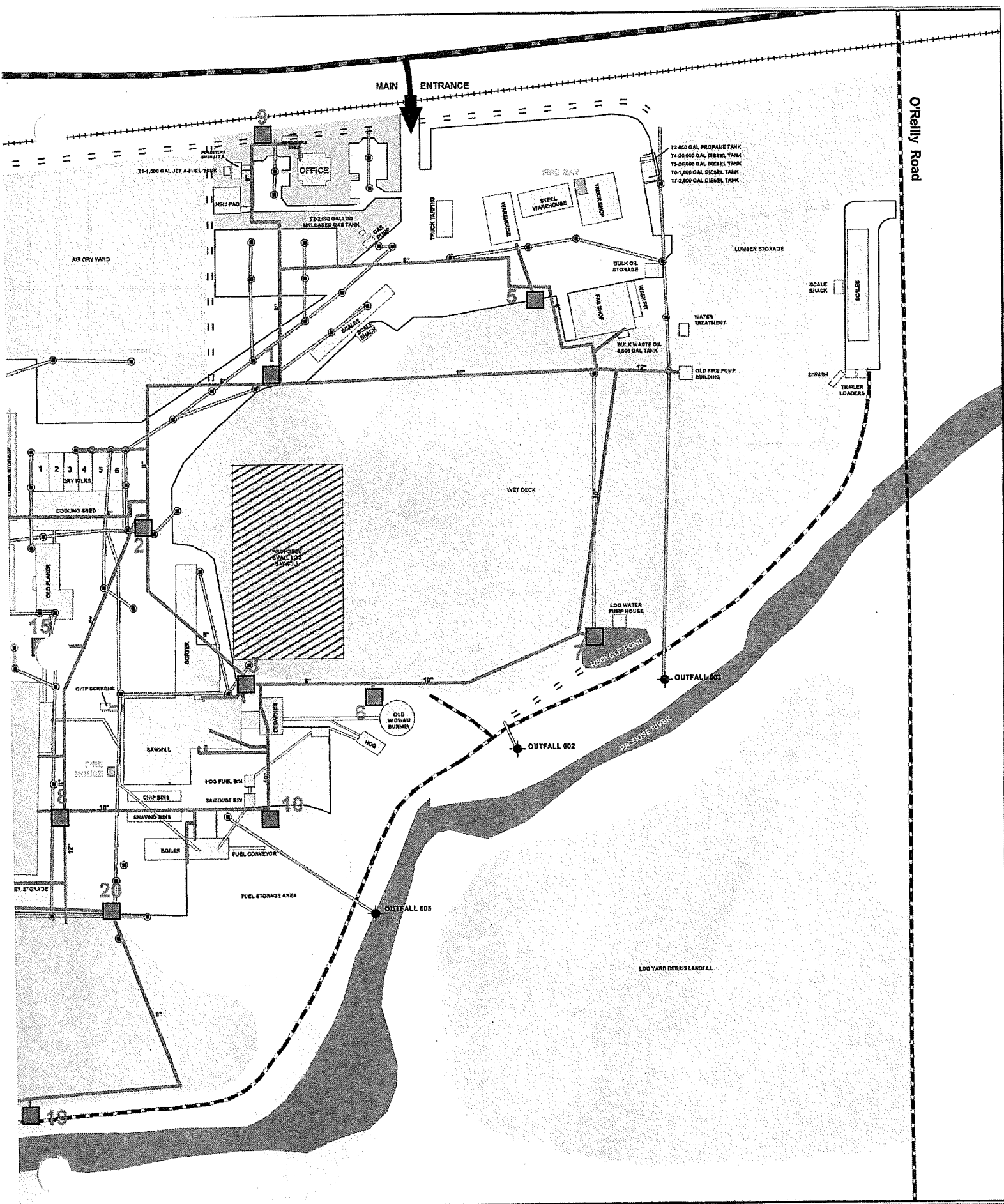
Princeton Mill Site 3/2006

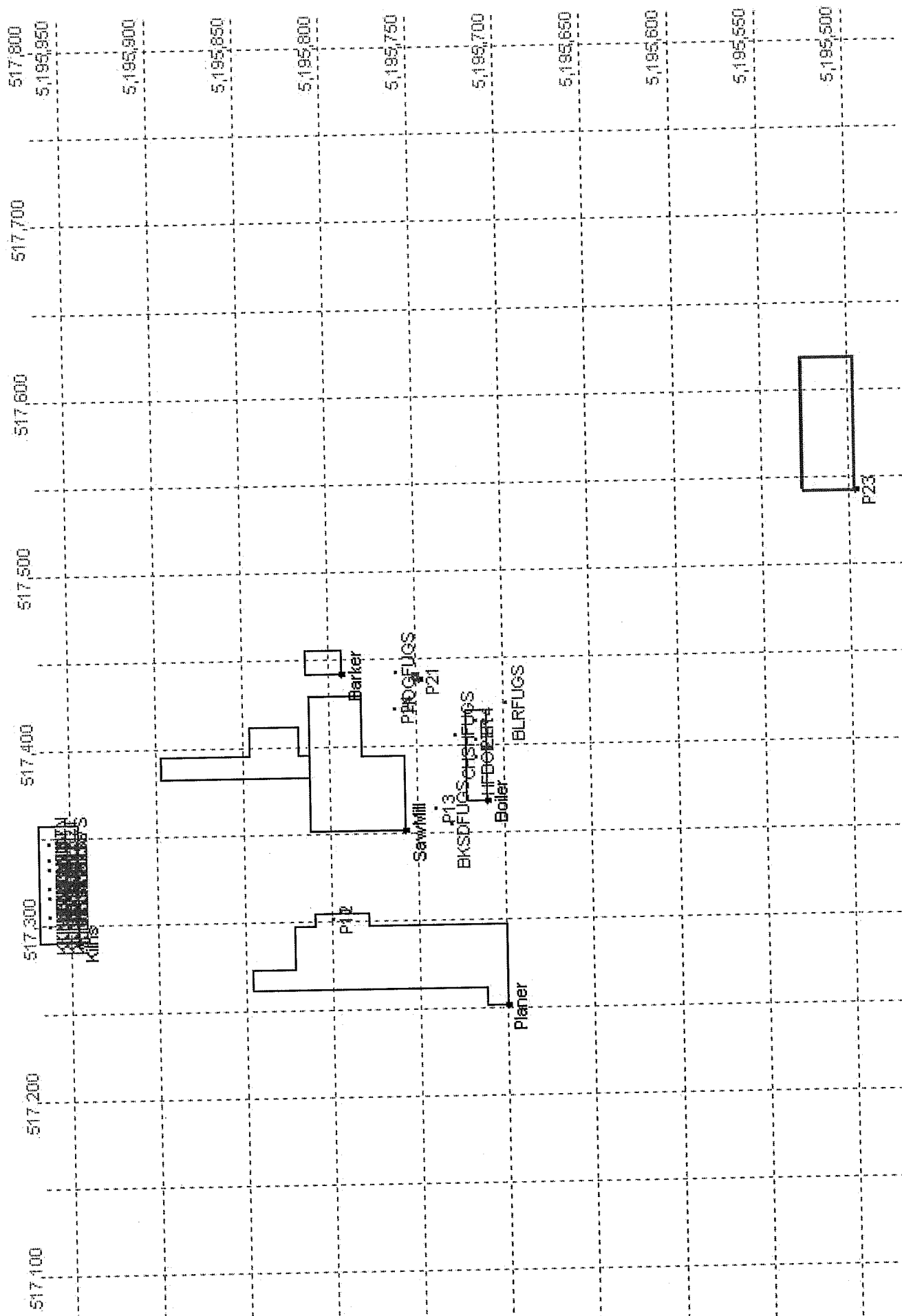


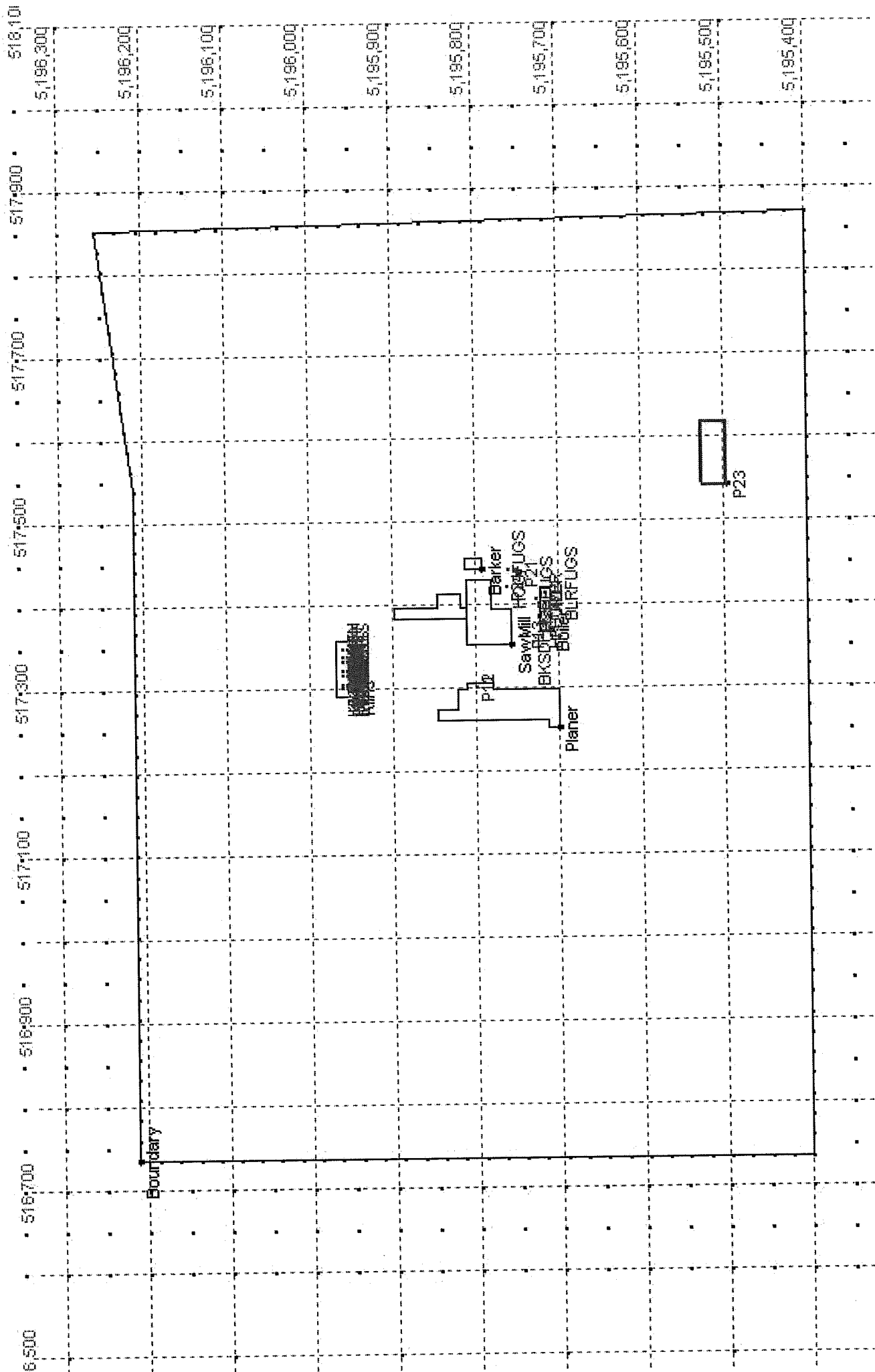
- Storm Drains
- Storm Drain Covers
- Fire Hydrants
- Fire Lines
- Out Flows

50 0 50 100 Feet









Title III Implications of Drying Kiln Source Test Results

Compiled by Jim Broad

Reviewed by Patty Jacobs, Mark Bailey, Kenan Smith, & Gary Andes

05-08-07

Background Information:

Drying kilns are known to be sources of HAP emissions. Wood fired boilers are also known to be sources of HAP emissions. Initially, it was thought that methanol, formaldehyde, and phenol were the HAPs of concern from drying kilns with ~95% of the HAPs being methanol. While there was limited test data, based on the assumed emission rates for methanol, at least one facility concluded that they were a major source for HAP. In early 2007, test data became available indicating that significant quantities of acetaldehyde may be emitted from drying kilns in addition to the methanol and for some species the acetaldehyde emission rate appears to significantly exceed the methanol emission rate. Based on the new information, sources should re-evaluate their HAP emissions and their major source status. The following discussion is intended as an aid for sources in such a re-evaluation. Title III applicability is based on potential emissions. A source with potential HAP emissions greater than Title III thresholds need to obtain an Oregon Title V Operating Permit and need to satisfy applicable Maximum Achievable Control Technology standards. A source can take operational limitations to become a Synthetic Minor to avoid Title III and Title V requirements, but the window to do so is very short requiring immediate action.

Comments about the Testing:

- This is a draft document and may contain errors. The following observations, assumptions and calculations are for discussion purposes.
- There is limited test data for Douglas Fir and Hemlock, with even less for other species.
- Additional testing is needed and conclusions may need to be altered as additional test data becomes available.
- Care should be taken when choosing, handling, and preparing lumber to be tested. Great effort must be made to mimic realistic drying conditions as closely as possible to gain the most representative source test results.
- OSU is only going to be available for conduction source tests until about July 2007. Dr. Mike Milota will be on sabbatical for a year and they don't want to continue testing when he is gone. They may want to get away for testing altogether.
- The test data originally focused on methanol and formaldehyde. Recent tests suggest that there may be significant acetaldehyde emissions in some wood species.

Assumptions about the Results:

- Pine is not normally dried at temperatures > 200° F
- There is no data for Slash Pine dried < 200° F
- Methanol
 - Methanol emissions increase rapidly with kiln temperature starting at about 180° F
 - When there was no specific test data for kilns operating above 200° F, methanol emissions were assumed to increase by 50% over 200° F test results. In some cases, the rate of increase could be substantially greater.
- Acetaldehyde
 - Acetaldehyde emissions may not increase with kiln temperature, and it is possible that acetaldehyde emissions may go down as temperature increases above some point.
 - When there was no specific acetaldehyde test data for a given species, acetaldehyde emissions were assumed to be the same as for hemlock (the highest emitting wood species for acetaldehyde).

Determining Title III Applicability:

- Action Levels have been calculated based on 80% of the single HAP Title III threshold for facilities with no HFB and 75% of the threshold for facilities with a HFB.
- Action Level throughputs assume single worst case wood species dried.
- Sources in excess of the Action Levels need to review their potential and actual HAP emissions to determine Title III applicability and synthetic minor options, if any.
- Sources would likely need some guidance on how to make actual HAP calculations for their facility.

Summary of Drying Kiln HAP Source Test Results

(Table 1)

The following is a compilation of all source test data collected to this point:

CORRECTION

Species	Data Source	Max. Drying Temp ° F	Methanol lbs/MMBF	Formaldehyde lbs/MMBF	Acetaldehyde lbs/MMBF	Propionaldehyde lbs/MMBF	Acrolein lbs/MMBF
Hemlock	OSU Weyerhaeuser	200	98	1.5			
	OSU Weyerhaeuser	200	075				
	OSU Weyerhaeuser	200	154	1.8			
	OSU Hampton	180	31.2	0.82			
	OSU Hampton	180	30.4	0.82			
	OSU Hampton	200	57	1.4			
	OSU Rosboro	175	44	0.8	133	0.8	2.4
	OSU Rosboro	175	77	1.4	128	1	1.1
	OSU Hampton	200	75	1.37	78	2	1.2
	OSU Hampton	200	83				
	OSU Weyerhaeuser	225	189	3.5			
	OSU Weyerhaeuser	225	167	3.4			
	OSU Weyerhaeuser	225	250	4			
	OSU Hampton	215	138	4.3			
Inland Douglas Fir	OSU	160	25	1 ave			
	OSU	160	23				
	OSU	160	26				
	OSU	160	18				
Douglas Fir	OSU Rosboro	174	68		43	0.5	0.9
	OSU Rosboro	174	69		71	0.6	0.4
White Fir	OSU	< 200	122 ave	2.8 ave			
Ponderosa Pine	OSU	175	50	2.2			
		175	80	3.6			
Lodgepole Pine	Forintec QA #5	195	73		12		
	Forintec QA #1	195	92				
	Forintec QA #2	195	64				
	OSU QA #1	195	28				
	OSU QA #2	195	20				
	OSU	250	62	4 ave			
	OSU	250	63				
	OSU	250	56				
	GP Kiln	235	150				
	GP Kiln	235	270		39		
Slash Pine	MSU Pilot	235	170		30		
	MSU Pilot	235	170				
	OSU Pilot	235	180				
	OSU Pilot	235	270		65		
	MSU Pilot	235	100				
	MSU Pilot	235	110				
	OSU Pilot	235	142				
	OSU Pilot	235	89				
	GP Kiln	220	170				
	GP Kiln	220	150				

**Assumed Drying Kiln HAP Emission Factors
(Table 2)**

Using the source test results from the previous table, these are the calculated averages:

Species	Max. Kiln Temp. °F	Total HAP lb/MMBF	Methanol lb/MMBF	Formaldehyde lb/MMBF	Acetaldehyde lb/MMBF	Propionaldehyde lb/MMBF	Acrolein lb/MMBF
Hemlock	< 200 ° F	189 199	72 82.46	1.24	113	1	1.6
Hemlock	> 200 ° F	305	186	3.8	113 ⁽¹⁾	1 ⁽¹⁾	1.6 ⁽¹⁾
Douglas Fir	< 200 ° F	97	38	1	57	0.55	0.65
Douglas Fir	> 200 ° F	116	57	1 ⁽¹⁾	57 ⁽¹⁾	0.55 ⁽¹⁾	0.65 ⁽¹⁾
White Fir	< 200 ° F	240	122	2.8	113 ⁽¹⁾	1 ⁽¹⁾⁽²⁾	1.6 ⁽¹⁾⁽²⁾
White Fir	> 200 ° F	301	183	2.8 ⁽¹⁾	113 ⁽¹⁾⁽²⁾	1 ⁽¹⁾⁽²⁾	1.6 ⁽¹⁾⁽²⁾
Ponderosa Pine ⁽³⁾	< 200 ° F	184	65	2.9	113 ⁽¹⁾⁽²⁾	1 ⁽¹⁾⁽²⁾	1.6 ⁽¹⁾⁽²⁾
Lodgepole Pine ⁽³⁾	< 200 ° F	73.6	55	04	12	1 ⁽¹⁾⁽²⁾	1.6 ⁽¹⁾⁽²⁾
Lodgepole Pine ⁽³⁾	> 200 ° F	78.6	60	4 ⁽⁶⁾	12 ⁽⁶⁾	1 ⁽¹⁾⁽²⁾	1.6 ⁽¹⁾⁽²⁾
Slash Pine ⁽⁴⁾	> 200 ° F	215	164	4 ⁽⁵⁾	44.7	1 ⁽¹⁾⁽²⁾	1.6 ⁽¹⁾⁽²⁾

⁽¹⁾ Assumes emissions of this HAP not temperature dependent. There is insufficient data to know for sure.

⁽²⁾ Assumes emissions are the same as hemlock

⁽³⁾ Pine is not normally dried at temperatures > 200° F

⁽⁴⁾ No data for Slash Pine dried < 200° F

⁽⁵⁾ Assume to be the same as for Lodgepole Pine

⁽⁶⁾ Assumes emissions the same as for Lodgepole Pine dried at < 200 ° F

**Assumed Hogg Fuel Boiler HAP Emission Factors
(Table 3)**

Pollutant	Emission Factor lb/MMlbSteam ⁽¹⁾	Reference
Phenol	0.086	AP-42; 9/03
Acrolein	6.77	AP-42; 9/03
Formaldehyde	2.20	NCASI TB 858; 2/03
Acetaldehyde	1.40	AP-42; 9/03
Benzene	5.58	NCASI TB 858; 2/03
Naphthalene	0.164	AP-42; 9/03
Chromium	0.001	NCASI TB 858; 2/03
Chlorine	1.34	AP-42; 9/03
Cobalt	0.00032	NCASI TB 858
Arsenic	0.0017	NCASI TB 858; 2/03
Cadmium	0.0069	AP-42; 9/03
Manganese	0.254	NCASI TB 858; 2/03
Mercury	0.00168	NCASI TB 858; 2/03
Nickel	0.0558	AP-42; 9/03
Selenium	0.00508	NCASI TB 858; 2/03
Hydrogen Chloride	1.134	NCASI TB 858; 2/03
Styrene	3.22	AP-42; 9/03
Toluene	1.56	AP-42; 9/03
Xylenes (total)	0.042	AP-42; 9/03
Methanol	1.404	NCASI TB 858; 2/03
Lead compounds	0.00981	NCASI TB 858; 2/03
Total HAP	25.24	

⁽¹⁾ Assumes 1100 Btu per pound of steam and 65% boiler efficiency

Drying Kiln Throughput Action Levels (12-month basis)

Action Levels were developed to give a source some guideline to whether or not they are at risk for being a major source of HAPs from their drying kilns and/or hogged fuel boilers. The Action Levels are specific to wood species, maximum drying kiln temperatures, and whether or not a hogged fuel boiler is the source of steam. The Department would not require HAP emission factor verification for sources operating below the Action Levels set forth in this table; these Action Levels are estimates only. It is solely the source's responsibility to determine HAP major source applicability.

Action Level Calculations:

1. Calculate maximum kiln throughput @ 80% of single HAP Title III threshold w/o a HFB

$$(\text{Maximum throughput in MMBF}) \times (\text{single HAP EF in lb/MMBF}) = 20,000 \text{ (lbs)} \times (0.8)$$

Example: Hemlock dried $\leq 200^\circ\text{F}$

$$(\text{Maximum throughput in MMBF}) \times (113 \text{ lb/MMBF}) = 16,000 \text{ lbs}$$

$$(\text{Maximum throughput in MMBF}) = 142 \text{ MMBF}$$

Conclusion: If the source has the potential to dry more than 142 MMBF of wood, and hemlock is the highest-emitting wood species they typically process, and their drying kiln temperatures are less than or equal to 200°F , then they would need a closer look at whether they would trigger Title III.

2. Calculate maximum kiln throughput @ 75% of Single HAP Title III threshold w/ a HFB (Assume HFB adds 5% to kiln HAPs)

$$(\text{Maximum throughput in MMBF}) \times (\text{single HAP EF in lb/MMBF}) = 20,000 \text{ (lbs)} \times (0.75)$$

Example: Hemlock dried $\leq 200^\circ\text{F}$

$$(\text{Maximum throughput in MMBF}) \times (113 \text{ lb/MMBF}) = 15,000 \text{ lbs}$$

$$(\text{Maximum throughput in MMBF}) = 133 \text{ MMBF}$$

Conclusion: If the source has the potential to dry more than 133 MMBF of wood, and hemlock is the highest-emitting wood species they typically process, and their drying kiln temperatures are less than or equal to 200°F , and they operate a hogged fuel boiler, then they would need a closer look at whether they would trigger Title III.

Estimated Action Levels (by wood species)
(Table 4)

Species	Max. Kiln Temp. °F	Drying Kiln Action Level (in MMBF)	
		w/ HFB	w/o HFB
Hemlock	< 200°F	142	133
Hemlock	> 200°F	86	80
Douglas Fir	< 200°F	281	263
Douglas Fir	> 200°F	280	188
White Fir	< 200°F	131	123
White Fir	> 200°F	87	82
Ponderosa Pine	< 200°F	142	133
Lodgepole Pine	< 200°F	290	272
Lodgepole Pine	> 200°F	267	249
Slash Pine	> 200°F	98	91

Actual Emission Calculations

This calculation needs to be done for each wood species and then summed to compile actual emissions for the source.

- a. To calculate actual emissions for a single HAP w/o HFB:

$$\text{Actual single HAP emissions} = \Sigma[(\text{actual kiln throughput by species in MMBF}) \times (\text{single HAP EF by species in lb/MMBF})]$$

- b. To calculate actual emissions for total HAPs w/o HFB:

$$\text{Actual total HAP emissions} = \Sigma(\text{single HAP emissions})$$

- c. To calculate actual emissions for a single HAP w/ HFB

$$\text{Actual single HAP emissions} = \Sigma[(\text{actual kiln throughput by species in MMBF}) \times (\text{single HAP EF by species in lb/MMBF})] + [(\text{actual MMlbSteam}) \times (\text{single HAP EF in lb/MMlbSteam})]$$

- d. To calculate actual emissions for total HAPs w/ HFB:

$$\text{Actual total HAP emissions} = \Sigma(\text{single HAP emissions})$$

**EMISSION FACTORS
WOOD PRODUCTS**

*www.deq.state.or.us/aq/permit/
ACDP/docs/AQ-EF02.pdf AQ-EF02*

Process Equipment	Description	Throughput Units	Pounds of Pollutant per Throughput Unit ¹				
			PM ²	SO ₂	NO _x	CO	VOC
Wood-Fired Boilers	Dutch Oven	1000 lb steam	0.4 ³	0.014	0.31 ⁴	3.0 ⁴	0.13
	Spreader-Stoker	1000 lb steam	0.4 ³	0.014	0.31 ⁴	2.0 ^{4,5}	0.13
	Fuel Cell	1000 lb steam	0.4 ³	0.014	0.31 ⁴	1.0 ^{4,6}	0.13
Veneer Dryer – Gas Heat	Doug Fir (uncontrolled)	1000 ft ² (3/8" basis)	0.52	NA ⁷	0.12	0.02	0.22
	Doug Fir (Burley or 45% control)	1000 ft ² (3/8" basis)	0.29	NA	0.12	0.02	0.22
	Hemlock, White Fir (uncontrolled)	1000 ft ² (3/8" basis)	0.15	NA	0.12	0.02	0.22
	Hemlock, White Fir (Burley or 45% control)	1000 ft ² (3/8" basis)	0.10	NA	0.12	0.02	0.22
Veneer Dryer – Steam Heat	Doug Fir (uncontrolled)	1000 ft ² (3/8" basis)	1.01	NA	NA	NA	0.04
	Doug Fir (Burley or 45% control)	1000 ft ² (3/8" basis)	0.56	NA	NA	NA	0.04
	Hemlock, White Fir (uncontrolled)	1000 ft ² (3/8" basis)	0.25	NA	NA	NA	0.04
	Hemlock, White Fir (Burley or 45% control)	1000 ft ² (3/8" basis)	0.15	NA	NA	NA	0.04
Veneer Dryer – Wood Fired	All species (<20% moisture in fuel)	1000 ft ² (3/8" basis)	0.75 ⁸	NA	0.4	1.4	0.2
	All species (≥20% moisture in fuel)	1000 ft ² (3/8" basis)	1.50	NA	0.4	1.4	0.2
Cyclone- Dry and Green chips, Shavings, Hogged Fuel/Bark, Green Sawdust	Medium Efficiency	Bone dry tons	0.5	NA	NA	NA	NA
	High Efficiency	Bone dry tons	0.2	NA	NA	NA	NA
	Baghouse control	Bone dry tons	0.001	NA	NA	NA	NA
Cyclone - Sanderdust	High Efficiency	Bone dry tons	2.0	NA	NA	NA	NA
	Baghouse control	Bone dry tons	0.04	NA	NA	NA	NA
Target Box		Bone dry tons	0.1	NA	NA	NA	NA
Lumber Dry Kilns	Douglas Fir	1000 board feet	0.02 ⁹	NA	NA	NA	0.5 ¹⁰
	Hemlock	1000 board feet	0.05 ⁹	NA	NA	NA	0.25 ⁹
	Ponderosa Pine	1000 board feet	ND ¹¹	NA	NA	NA	1.4 ¹⁰
Press Vents - uncontrolled	Particleboard	1000 ft ² (3/4" basis)	SS ¹²	NA	NA	NA	SS
	Hardboard	1000 ft ² (1/8" basis)	SS	NA	NA	NA	SS

¹ The emissions factors listed in this table should only be used when better information (i.e., source test data) is not available.

² The PM₁₀ fraction is dependent upon the type of control equipment. See AQ-EF03 for estimated PM₁₀ fractions.

³ The PM factors are equivalent to 0.1 gr/dscf at 65% boiler efficiency. For other allowable emissions concentrations, the emission factor may be ratioed (e.g., 0.2/0.1 gr/dscf x 0.40 = 0.80 lb/10³ steam).

⁴ These factors are based on collective source tests as of 1992.

⁵ Spreader-Stokers with small combustion chambers may exhibit higher CO levels.

⁶ Recent tests have shown CO levels in the range of 0.1 to 0.5.

⁷ There is no applicable emission factor because the pollutant is either not emitted or emitted at negligible levels.

⁸ Based on statewide rule limit.

⁹ Based on OSU study (Willamette Industries)

¹⁰ Based on University of Idaho study (NCASI) and reported as pounds of carbon per 1000 board feet.

¹¹ No data available, but expected to be less than Douglas Fir factor.

¹² Use source specific data because most plants have performed source testing.

Bennett Lumber Products
Air Quality Modeling Report
09/07

1 Purpose

This Protocol describes the analysis estimating impacts of facility criteria pollutant emissions, and the increase in TAPs emissions on ambient air quality impact as a result of the proposed action. The results of the modeling analyses are shown to demonstrate those impacts do not exceed any applicable ambient air quality impact limits. The report is consistent with the modeling protocol and IDEQ comments on that protocol. It describes the complete modeling analysis, including results. This analysis updates the analysis provided to IDEQ in the Bennett Lumber Products (BLP) June, 2007 permit application slightly to respond to IDEQ comments on that modeling analysis and the permit application consistent with the September 2007 IDEQ modeling protocol approval.

The increase in emissions associated with the PTC application comes from an increase in kiln and facility throughput and allowable PM-10 emission rate from the boiler. No new emission sources are proposed. All emission sources would remain unchanged from current and previously permitted locations and regulatory identifications. The facility property boundary will serve as the ambient air quality boundary, as in previous IDEQ-approved modeling analyses. A thorough defense of the ambient air boundary is included in Section 5 describing the Modeling Domain and model layout.

Analyses have been prepared for all criteria pollutants to document that impacts from the facility's emissions of those pollutants do not cause or significantly contribute to an exceedance of NAAQS standards. Analyses were also prepared for all TAPs emitted over IDAPA 585 or 586 EL thresholds to demonstrate that the increase of emissions as a result of the proposed action would not lead to ambient air quality impacts above IDAPA 585 AAC or 586 AACC impact limits. Air dispersion modeling was conducted in accordance with EPA's *Guideline on Air Quality Models* and IDEQ's *Air Quality Modeling Guideline*, consistent with an IDEQ-approved modeling protocol.

2 Model Description / Justification

Consistent with the IDEQ-approved modeling protocol, the model chosen was AERMOD, the United States Environmental Protection Agency (USEPA)-approved dispersion model. AERMOD, one of the most frequently used regulatory dispersion models in the United States since it replaced ISCST3 in EPA guidance, is the most appropriate of the EPA-approved models given the site's physical characteristics and the variety of facility emission sources. The sophisticated Prime building downwash algorithm was conservatively applied for the Bennett Princeton facility even though the ambient air boundary for this facility begins multiple building lengths from any onsite building. The model was applied as recommended in EPA's *Guideline on Air Quality Models* (2001), utilizing that document's regulatory default options and the simple and complex terrain options and other input settings consistent with State of Idaho Air Quality Modeling Guideline. The modeling of the facility dry kilns with pseudo-stacks that approximate actual exhaust velocity is consistent with that that recommended and approved in 2005 by IDEQ in the analysis for the PTC approving the 7th facility dry kiln, and IDEQ approval of the current modeling protocol.

3 Facility Emissions

Facility-wide emissions are documented in the BLP 0907 EL.xls spreadsheet accompanying this report. That emission inventory, included with this submittal, documents how all proposed emission rates were calculated, and cross references all emissions in the emission inventory to modeled sources on the last worksheet, BLP 0907 Model Data. As discussed in Section 1, increased throughput proposed for the dry kilns would drive an increase in throughput facility-wide. The proposed action also includes an increase in the allowable PM-10 emission rate from the facility boiler. Therefore, short term and annual emission rates were calculated for all emission sources at the facility, and the modeling includes impact

assessments for all pollutants (criteria and TAP) emitted above IDEQ modeling thresholds, for all averaging periods ambient air quality impact limits exist.

For all impact analyses for averaging periods less than one year, all facility emission sources were conservatively assumed to operate continuously. This assumption overestimates the emissions from all processes that do not operate continuously because the hourly maximum emission rates for those sources were calculated from annual throughput based upon a lower number of hours of operation. This overly conservative assumption should assure that the actual facility impacts will be well below allowable levels. Annual average impact analyses include emission rates consistent with the maximum PTE documented in the facility emission inventory.

4 Model Source Data

Sources included in the modeling include all emission sources documented in the emission inventory for all pollutants except VOCs. All point sources were depicted with actual stack data, except the dry kilns. Stack data (height, orientation, presence of physical blockage, exhaust flow, and/or temperature) for all stacks other than the boiler were checked in the field by plant engineer Jeff Abbott. Mr. Abbott purchased a heavy duty CFM thermal anemometer to make those data checks. The dry kilns were depicted in the model exactly as IDEQ recommended and approved for the facility's 2005 PTC analysis, as pseudo-stacks with wide diameters and exhaust flow rates matching the volume of actual kiln fan-driven exhaust rates. Actual emissions from the seven facility dry kilns exhaust from six to eight vents on each side of each kiln. The model kiln sources are identified with the source names as KILNab, where a is the kiln number (1 to 7, from east to west), and b is N represents the northernmost representative stack, T represents the central representative stack, and S represents the southernmost representative stack. The modeled boiler stack parameters were taken directly from the most recent source test, performed on June 2006 and reported to IDEQ. The steaming rate during that source test was consistent with the annual steaming rate requested, and within 20% of the requested maximum steaming rate which also represents the equipment capacity. The boiler will have to operate at that rate to meet proposed allowable production.

All pollutants emitted only from the boiler stack (NO_x, SO₂, CO, and all TAPs except acetaldehyde and formaldehyde) were modeled as a normalized emission of 1 lb/hr using the pollutant identification BOILER. Actual predicted maximum impacts were calculated by multiplying the model predicted maximum impact for the appropriate averaging period by the proposed emission rate (in lbs/hr). Those calculations can be seen on the BLP 0907 EI.xls spreadsheet on the right side of worksheet Boiler HAPs for those pollutants, and on the bottom of worksheet Boiler for criteria pollutants.

The facility fugitive emissions were modeled as three specific area source (the P21 target box and P23, the facility Wood Debris Management Area, and YARDFUGS for log yard fugitives) and four volume sources. Those volume sources represented grouped fugitive emissions from process, storage, and transfer operations in four separate activity areas: the fugitives from the hog area, from the boiler and boiler fuel storage area, from the chip and shavings truck bin area, and from the bark and sawdust truck bin area. The BLP 0907 EI.xls spreadsheet worksheets Transfers and St Storage and BLP 0907 Model Data explicitly show that each emission point was modeled, and which volume or area source it was included in. Those volume sources are located in close proximity to the sawmill, boiler, and/or debarker buildings. Each modeled fugitive source except the wood debris management area is less than 150 feet in diameter, and located at least 1000 feet from the ambient air boundary. The source parameters for the four volume sources and the log yard area source are based upon the horizontal area over which the numerous transfer (conveyors and drops) and storage points (enclosed truck bins and/or storage piles) occur. These sources mostly represent potential release points for the pneumatic system and/or physical processes that conveys wood by-products generated at the sawmill and planer to truck bins or to the boiler

via the hog in these areas and the small percentage of unusable by-product to final disposition. Horizontal dimensions range from to 50 feet around the 2 sets of two truck bins (bark and sawdust, and chips and shavings) to 125 feet near the boiler (to account for fuel piles and transfers to/from). The vertical dimensions of the four volume sources are based upon the heights of the building(s) in the immediate vicinity of the transfer and storage emission areas. The YARDFUGS vertical dimension is low, based upon wind erosion from the log yard.

Model point source parameters were prepared by Chris Johnson of CJ Environmental and verified with data and support from the Bennett Lumber facility staff.

Table 1 shows the model source parameters for all model sources and all criteria pollutants modeled.

Table 1 ISCST3 Model Source Data

POINT SOURCES			Easting (X)	Northing (Y)	Base Elev	Stk Ht	Temp	Exit Vel	Stk Diam	PM ₁₀ EN	FORM ALD	ACET ALD	BOILER
Source ID	Stack Type	Source Description	(m)	(m)	(m)	(ft)	(°F)	(fps)	(ft)	(lb/hr)	(tpy)	(tpy)	(lb/hr)
HFBOILER	DEF	hog fuel boiler	517394	5195717	772	50.0	250.0	76.0	3.6	27.00	0.4260	0.0804	1
KILN5N	DEF	kiln pseudo stack	517305.95	5195962.23	773	28.5	170.0	22.1	3.5	0.0570	0.0063	0.0121	
KILN3N	DEF	kiln pseudo stack	517322.32	5195962.23	773.27	28.5	170.0	22.1	3.5	0.0285	0.0032	0.0060	
KILN1N	DEF	kiln pseudo stack	517338.68	5195962.23	773.57	28.5	170.0	22.1	3.5	0.0570	0.0063	0.0121	
KILN5T	DEF	kiln pseudo stack	517305.95	5195956.62	773	28.5	170.0	22.1	3.5	0.0570	0.0063	0.0121	
KILN3T	DEF	kiln pseudo stack	517322.32	5195956.62	773.32	28.5	170.0	22.1	3.5	0.0285	0.0032	0.0060	
KILN1T	DEF	kiln pseudo stack	517338.68	5195956.62	773.56	28.5	170.0	22.1	3.5	0.0570	0.0063	0.0121	
KILN5S	DEF	kiln pseudo stack	517305.95	5195951.02	773	28.5	170.0	22.1	3.5	0.0570	0.0063	0.0121	
KILN3S	DEF	kiln pseudo stack	517322.32	5195951.02	773.31	28.5	170.0	22.1	3.5	0.0285	0.0032	0.0060	
KILN1S	DEF	kiln pseudo stack	517338.68	5195951.02	773.56	28.5	170.0	22.1	3.5	0.0570	0.0063	0.0121	
KILN6S	DEF	kiln pseudo stack	517300.5	5195951.02	773	28.5	170.0	22.1	3.5	0.0570	0.0063	0.0121	
KILN4S	DEF	kiln pseudo stack	517316.86	5195951.02	773	28.5	170.0	22.1	3.5	0.0570	0.0063	0.0121	
KILN2S	DEF	kiln pseudo stack	517333.23	5195951.02	773.47	28.5	170.0	22.1	3.5	0.0570	0.0063	0.0121	
KILN6N	DEF	kiln pseudo stack	517300.5	5195962.23	773	28.5	170.0	22.1	3.5	0.0570	0.0063	0.0121	
KILN4N	DEF	kiln pseudo stack	517316.86	5195962.23	773	28.5	170.0	22.1	3.5	0.0570	0.0063	0.0121	
KILN2N	DEF	kiln pseudo stack	517333.23	5195962.23	773.46	28.5	170.0	22.1	3.5	0.0570	0.0063	0.0121	
KILN6T	DEF	kiln pseudo stack	517300.5	5195956.62	773	28.5	170.0	22.1	3.5	0.0570	0.0063	0.0121	
KILN4T	DEF	kiln pseudo stack	517316.86	5195956.62	773	28.5	170.0	22.1	3.5	0.0570	0.0063	0.0121	
KILN2T	DEF	kiln pseudo stack	517333.23	5195956.62	773.47	28.5	170.0	22.1	3.5	0.0570	0.0063	0.0121	
KILN7N	DEF	kiln pseudo stack	517347.96	5195962.23	773.73	28.5	170.0	22.1	3.5	0.0570	0.0063	0.0121	
KILN7T	DEF	kiln pseudo stack	517347.96	5195956.62	773.68	28.5	170.0	22.1	3.5	0.0570	0.0063	0.0121	
KILN7S	DEF	kiln pseudo stack	517347.96	5195951.02	773.69	28.5	170.0	22.1	3.5	0.0570	0.0063	0.0121	
P7	HORIZ	sawdust	517404	5195717	772	59.0	68.0	0.0	0.0	0.135			

		cyclone +P4 P6											
P11	HORIZ	shavings cyclone	517302	5195800	772.42	60.0	68.0	0.0	0.0	0.19			
P12	HORIZ	shavings cyclone	517302	5195800	772.42	75.0	68.0	0.0	0.0	1.576			
P13	RCAP	shavings cyclone	517365	5195740	772	52.0	68.0	0.0	3.2	1.092			
P14	HORIZ	shavings cyclone	517415	5195717	772	60.0	68.0	0.0	0.0	0.515			
P24	DEF	baghouse	517422	5195763	772.6	19.0	68.0	0.0	1.0	4.00E-05			

AREA SOURCES		Easting (X)	Northing (Y)	Base Elevation	Rel Ht	East Length	North Leng	Vert Dim	PM_TEN	FORMALD	ACETALD	BOILER
Source ID	Source Description	(m)	(m)	(m)	(ft)	(ft)	(ft)	(ft)	(lb/hr)	(tpy)	(tpy)	(lb/hr)
P23	Land app ash	517542.6	5195496.0	784.3	1.0	250	100	3.0	0.153			
YARDFUGS	Log yard fugitives	517250.6	5195640.0	784.3	1.0	125	60	4	0.024			

Source ID	Source Description	Easting (X)	Northing (Y)	Base Elev	Rel Ht	Horiz Dim	Vert Dim	PM_TEN	FORMALD	ACETALD	BOILER
		(m)	(m)	(m)	(ft)	(ft)	(ft)	(lb/hr)	(tpy)	(tpy)	(lb/hr)
HOGFUGS	Hog area fugitives	517443.0	5195762.0	773.0	0.9	34.9	20.5	0.431			
BKSFUGS	Bark sawd bin fugitives	517355.3	5195731.5	772.0	3.1	23.3	19.5	0.487			
CHSHFUGS	Chip shavs bin fugitives	517407.0	5195728.5	772.0	3.1	23.3	19.5	0.508			
BLRFUGS	boiler area fugitives	517425.0	5195699.5	772.0	2.1	58.1	19.5	0.185			
P21	target box	517438.0	5195748.0	772.4	7.9	2.8	16.3	0.788			

All facility buildings within GEP distance / height ratios were included in the model as potential sources of downwash. Actual building heights were verified and used. The buildings modeled include the sawmill and all structures around the points of release, but not the low office and maintenance shop well north of all emission points or other small sheds not tall enough to trigger downwash.

Figure 1 shows the locations of the sources within the Bennett Lumber facility, along with the facility buildings. All model sources are identified in red. The kilns are at the top of the figure, where solid red indicates the overwriting of the 21 model kiln source names. P23 to the southwest represents the facility Wood debris management area. The stack sources, P21, and the representative volume sources are south of the sawmill.

Figure 1 Bennett Lumber, Princeton Buildings and Emission Sources

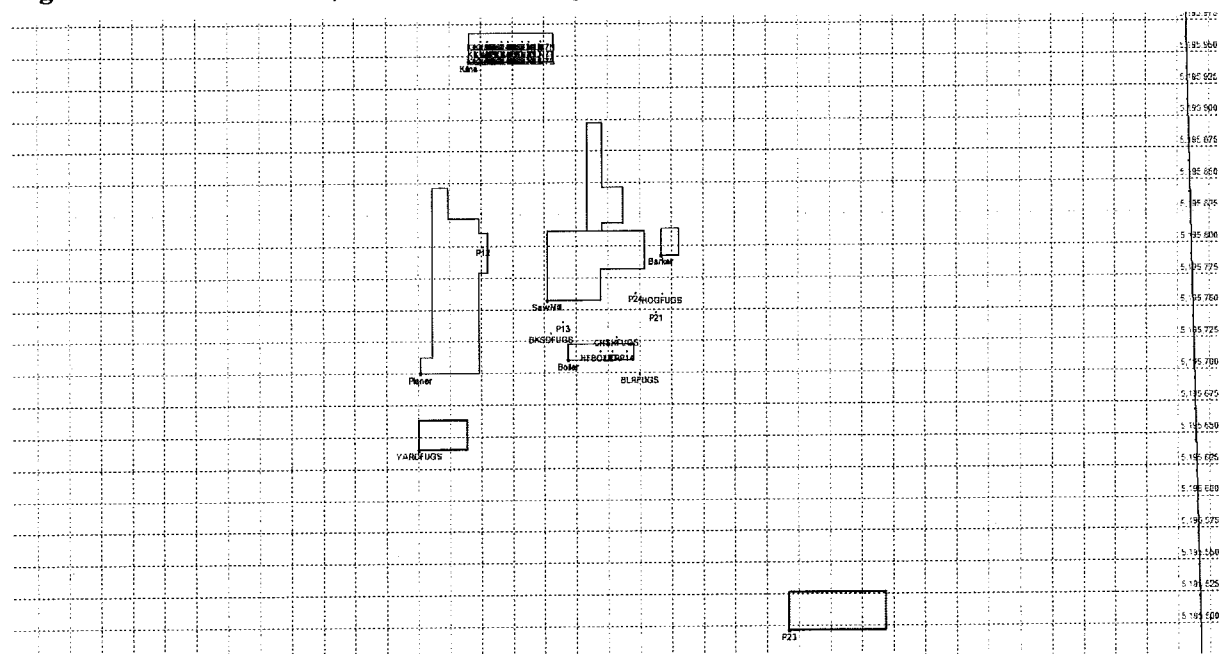
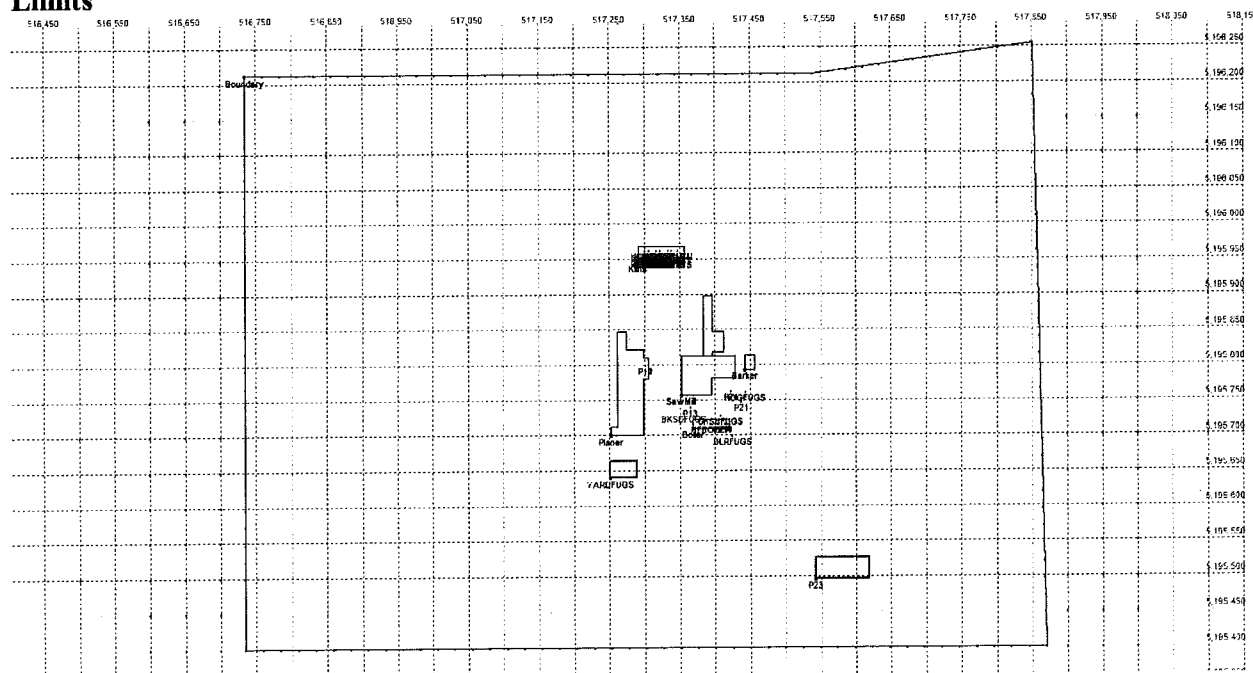


Figure 2 shows a more complete view of the facility, its property and ambient air boundary. Public access is discouraged inside the property boundary by fencing around most of the facility perimeter. Employees are trained to discourage or report unauthorized access. Dots on the figure represent the receptors nearest the public access limit. For scale, the inner receptors in this figure are spaced 25 meters apart. Facility emission sources are again shown in red. The dots outside the facility boundary represent the nearest model receptors.

Figure 2 Bennett Lumber Emission Sources, Building, and Property Boundary / Public Access Limits



The general public is not routinely invited onsite for business. The facility does no retail selling onsite. Public access is discouraged by the industrial nature of the large facility in a rural area with few neighbors (none close), with substantial land holdings providing significant buffer from any air emissions point. The entire perimeter of the facility is fenced or gated, and is signed No Trespassing at the river roadside at the river and elsewhere around the fence. Employees are trained to check for and discourage public access and/or notify the facility's office of any unauthorized access. The facility layout includes private onsite roads on both sides of the river, and offers clear view of the river banks and most parts of the river from most facility activity areas.

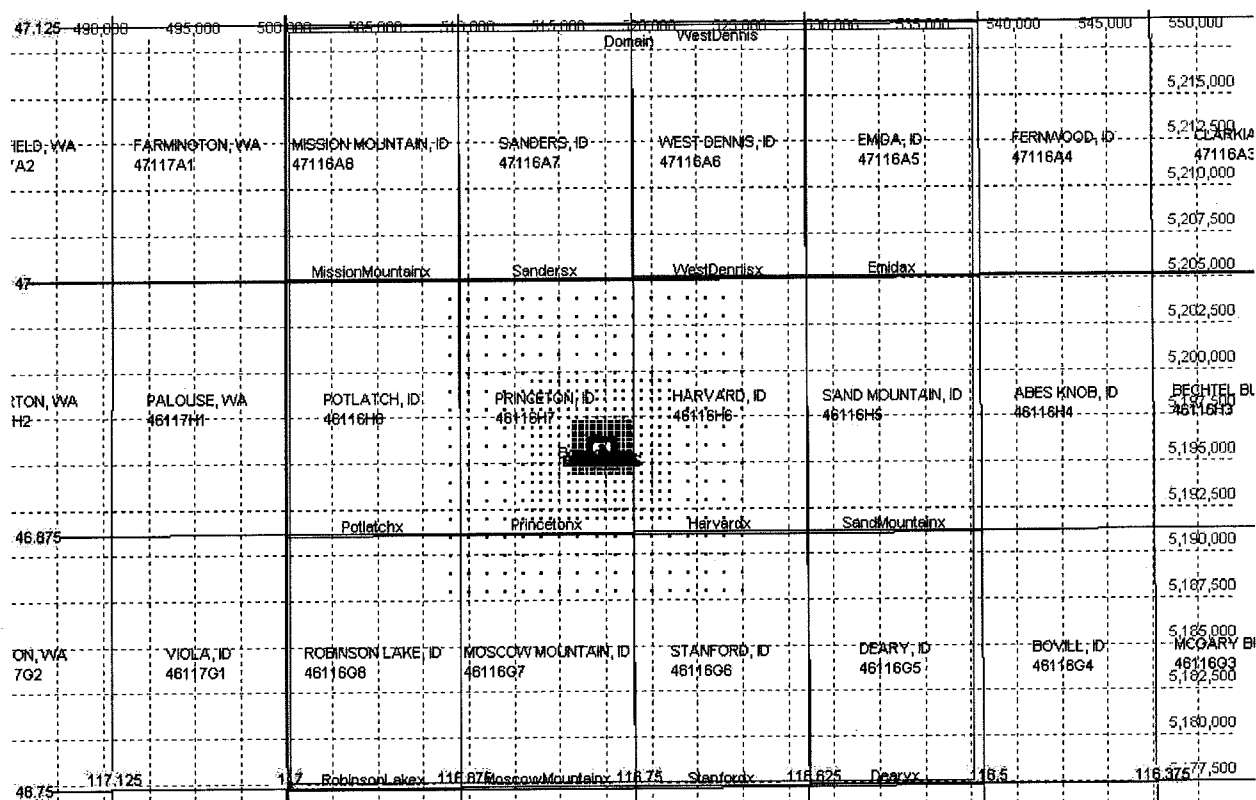
This stretch of the Palouse River is not on the Idaho Department of Lands navigable river list. Many riverside residents run cattle in the rural Palouse River valley. The river fails to meet Idaho Fish and Game statute 36-1601 requirements for a navigable river that can float 6 inch logs, other floatable commodities or be navigated by a boat. There are numerous fences across the river upstream and downstream, including at least intermittently one just beyond the downstream end of the property. Fishing in the river is generally poor; fishermen are very rare from Harvard upstream to Potlatch far downstream.

On these bases, the facility's ambient air boundary for this analysis is its fenced property boundary.

The model receptor network used in this analysis includes 25 meter grid density around the property boundary, 50 meter grid density for the first 100 meters beyond, 100 meter grid density out to 300 meters, 250 meter grid density to 1000 meters, 500 meter grid density to 3000 meters, and 1000 meter grid density out to 8 kilometers.

The model domain was calculated by the BeeLine BEEST program to conservatively include nearly the entire USGS quad for any quad that elevations meeting the AERMOD guidance requirements for inclusion based upon elevation. The AERMAP program was used to set elevations for all model buildings, source bases, and model receptors, and to process elevation and terrain data to be ready for the AERMOD analysis. The innermost portions of the model receptor network can be seen in Figure 2. Figure 3 shows the remainder of the model receptor network, the model domain (outlined in green), and the corresponding USGS topographic map areas covered.

Figure 3 Outer Receptor Network, with Boundaries and Buildings



6 Elevation Data

All elevation heights used in this modeling analysis were calculated from USGS NAD 27 7.5-degree (30m or less horizontal resolution) DEM data using the Bee-Line BEEST preprocessing system and the AERMAP program. Consistency between building base elevations on all sides and observed roof heights was verified.

7 Meteorological Data

Five years of National Weather Service data from the Spokane airport, from 1986 to 1990, was retrieved from the Lakes Environmental Web Met website, and processed via AERMET for use in this analysis. Actual information for the met data site was included in the AERMET run, along with Aledo, Bowen ratio, and surface roughness data consistent with grasslands (with average moisture levels for the Bowen ratio). The facility is in the grassy and open plains of the Potlatch River valley, below the forested valley walls and uplands.

The Spokane wind data field was rotated 45 degree wind counterclockwise rotation, as in previous IDEQ-approved ISCST3 model applications, to account for the orientation of the Potlatch River valley, flowing ESE to WNW in this vicinity as opposed to the SSW to ENE local forcing affecting the Spokane airport winds.

Consistent with Kevin Schilling of IDEQ subsequent to the IDEQ modeling protocol approval, rather than add 20% to the model results because distant meteorological data was used, IDEQ would accept modeling with a second meteorological data set. IDEQ recommended Boise meteorological data, and wind rotation as appropriate to have prevailing winds align with forcing terrain at the site. Research showed a 35

degree clockwise rotation would most appropriately reorient the prevailing NW – SE air flow from Boise with the terrain forcing in the the Palouse River valley area of the facility, which is more ESE to WNW. Modeling runs were duplicated for all analyses with this Boise meteorological data file. The higher of the two sets of results with two wind fields, in all cases from the Spokane meteorological data, were used in comparisons with applicable impact limits.

8 Land Use Classification

The model includes rural and urban algorithm options. These options affect the wind speed profile, dispersion rates, and mixing-height formula used in calculating ground-level pollutant concentrations. A protocol was developed by USEPA to classify an area as either rural or urban for dispersion modeling purposes. The classification is based on average heat flux, land use, or population density within a three-km radius from the plant site. Of these techniques, the USEPA has specified that land use is the most definitive criterion (USEPA, 1987). The urban/rural classification scheme based on land use is as follows:

The land use within the total area, A_0 , circumscribed by a 3-km circle about the source, is classified using the meteorological land use typing scheme proposed by Auer (1978). The classification scheme requires that more than 50% of the area, A_0 , be from the following land use types in order to be considered urban for dispersion modeling purposes: heavy industrial (I1); light-moderate industrial (I2); commercial (C1); single-family compact residential (R2); and multi-family compact residential (R3). Otherwise, the use of rural dispersion coefficients is appropriate.

The Bennett Lumber Princeton facility is located in a rural area outside the small town of Princeton, surrounded by open land with very sparse development. The vast majority of the three kilometer circle would include open land featuring agricultural or forestry land uses. Site reconnaissance showed that the area A_0 exceeds the 50% urban land use criteria necessary for use of urban dispersion coefficients. Rural dispersion coefficients were therefore used in the air quality dispersion modeling, as IDEQ used or recommended for all previous facility modeling analyses.

9 Background Concentrations

The IDEQ rural / agricultural background concentrations were used for this rural area, as per IDEQ recommendation. Those values can be seen in Table 2 below.

10 Evaluation of Compliance with Standards

The ambient air quality impact limits applicable to this analysis for criteria pollutants are the National Ambient Air Quality Standards, and the IDAPA standards which match them. The maximum potential ambient concentration compared against the NAAQS for all impact analyses except the 24-hour average PM-10 was the maximum model predicted impact at any receptor in any year. For 24-hour average PM-10, the highest second maximum predicted impact at any receptor in any year was used added to the background value to calculate the maximum potential ambient concentration to compare to the applicable impact limit. For all pollutants emitted only the boiler, reported maximum impacts are the model results of a normalized emission rate of 1 lb/hr multiplied through by the maximum emission rate in the emission inventory. All reported maximum impacts occurred with the Spokane meteorological data set. Impact projections were consistently with the Boise meteorological data file.

For TAPs, the applicable standards are the IDAPA 585 AACs or the IDAPA 586 AACCs. That ambient limit applies to the maximum impact predicted at any receptor in any year for all averaging periods as a

result of proposed increases in TAP emissions.

Table 2 Ambient Impact Limits & Comparison of Predicted Impacts with Applicable Ambient Standards

Pollutant	Averaging Period	Background Conc. ($\mu\text{g}/\text{m}^3$)	Modeled Worst Case Impact ($\mu\text{g}/\text{m}^3$)	Max Pot. Ambient Conc. ($\mu\text{g}/\text{m}^3$)	NAAQS ($\mu\text{g}/\text{m}^3$) Or AAC, AACC for TAPs	Location Of Highest Model Impact	Year of Reported maximum
PM-10	24-hour	73	71.5	144.5	150	W bndry W of sawmill	1986
	Annual	26	10.6	36.6	50	E bndry E of sawmill	1990
SO ₂	3-hour	-	159.3	insignificant	1300	S bndry S of boiler	1990
	24-hour	-	4.0	insignificant	365	N central bndry	1990
	Annual	-	0.46	insignificant	80	E bndry E of sawmill	1990
NO _x	Annual	17	4.03	21.03	100	E bndry E of sawmill	1990
CO	1-hour	-	742	insignificant	40000	1km E of E bndry	1986
	8-hour	-	215	insignificant	10000	S bndry S of boiler	1990
Acetaldehyde	Annual	-	0.048	-	0.45	N boundary	1990
Acrolein	24-hour	-	0.149	-	12.5	S bndry S of boiler	1990
Benzene	Annual	-	0.0176	-	0.12	E bndry E of sawmill	1990
Benzo a pyrene	Annual	-	0.0000109	-	0.0003	E bndry E of sawmill	1990
Carbon Tetrachloride	Annual	-	0.000189	-	0.067	E bndry E of sawmill	1990
Chloroform	Annual	-	0.000117	-	0.043	E bndry E of sawmill	1990
1,2 Dichloroethane	Annual	-	0.000122	-	0.038	E bndry E of sawmill	1990
Dichloromethane	Annual	-	0.00122	-	0.24	E bndry E of sawmill	1990
Formaldehyde	Annual	-	0.035	-	0.077	N boundary	1990
Hydrogen Chloride	24-hour	-	0.707	-	375	S bndry S of boiler	1990
2,3,7,8 tetra... dioxins	Annual	-	3.6E-11	-	2.2E-08	W bndry W of sawmill	1990
Tetrachloroethane	Annual	-	0.000159	-	0.017	E bndry E of sawmill	1990
Arsenic	Annual	-	9.2E-5	-	2.3E-04	E bndry E of sawmill	1990
Cadmium	Annual	-	1.7E-5	-	5.6E-04	E bndry E of sawmill	1990
Nickel	Annual	-	1.4E-4	-	4.2E-03	E bndry E of sawmill	1990

Maximum predicted impacts for all pollutants and averaging periods occurred with the Spokane meteorological data file, and occurred at or the property and ambient air boundary for every averaging period longer than one hour. That was likely caused by building downwash, the fairly distant boundary, and a moderate percentage of the emissions being fugitive or low loft (kilns). These maximum impact predictions are very conservative, since all emissions were modeled 8760 hours per year at maximum short term emission rates.

Criteria pollutant maximum impacts from boiler emissions calculations are shown at the bottom of the emission inventory spreadsheet worksheet BOILER. The boiler HAP maximum impacts are shown on the right side of the emission inventory spreadsheet worksheet BOILER HAPs.

Table 2 shows that predicted maximum ambient concentrations for criteria pollutants, and maximum impacts for increases in TAP emissions, are well below all applicable impact limits. Extended calculation of TAP impacts from the normalized BOILER modeling results and comparison with applicable impact limits can be seen in the Boiler HAPs section of the application's emission inventory.

Only one pollutant, PM-10, is predicted to have ambient concentrations at half the IDEQ impact standards. Figure 4 below shows the predicted highest second maximum ambient impacts for 24-hour average PM-10 for 1990, the year with the highest second maximum impact observed during modeling. All receptors with maximum predicted impacts over the 5 ug/m3 significance level are shown.

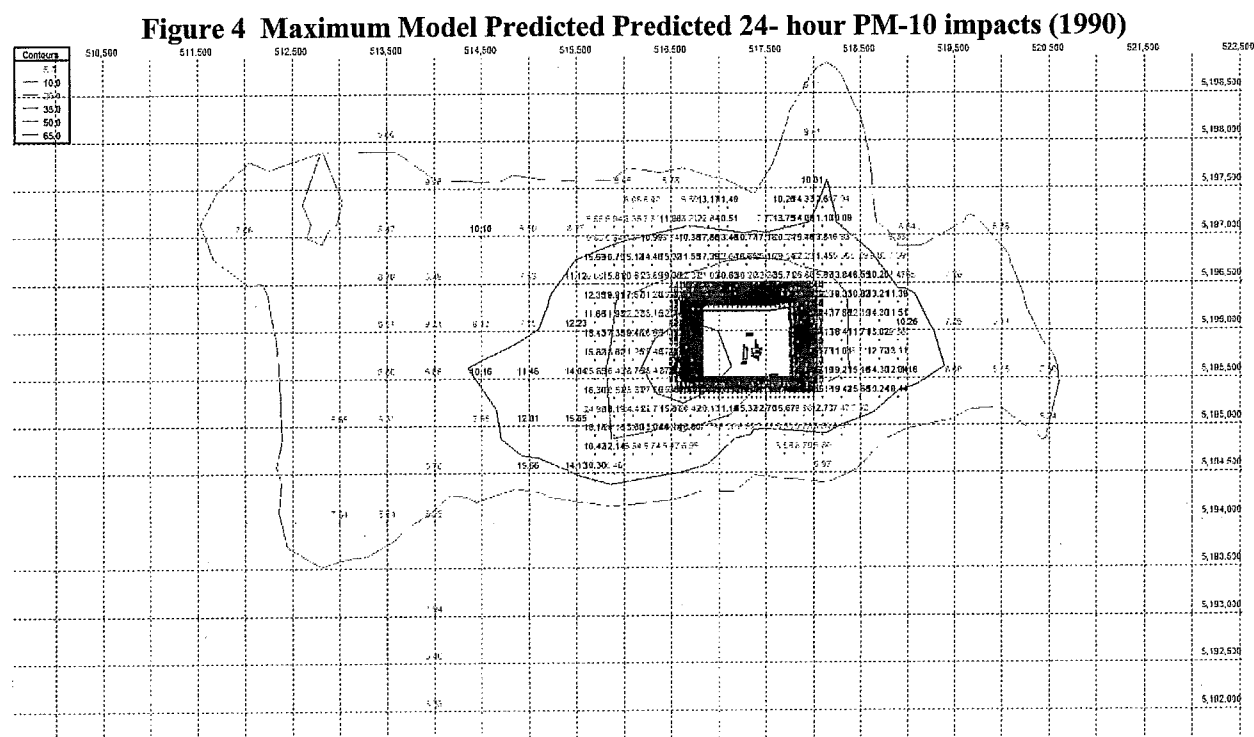
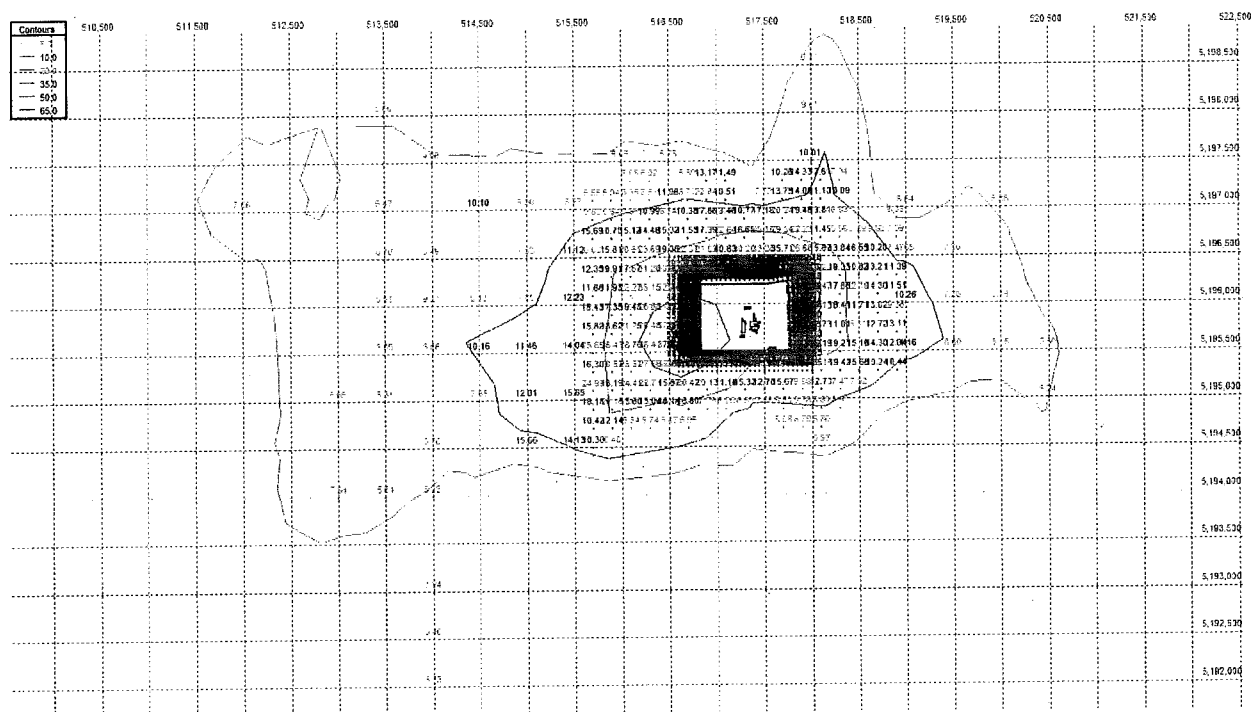


Figure 5 below shows the predicted highest maximum annual average PM-10 ambient impacts for 1990, the year with the highest maximum impact observed during modeling. All receptors with maximum predicted impacts over the significant impact level (SIL) of 5 ug/m3 are shown.

Figure 5 Maximum Model Predicted Annual PM-10 impacts (1990)



4 11 Electronic Copies of the Modeling Files

Electronic copies of all input, output, and support modeling files necessary to duplicate the model results are provided on the accompanying zipped file: Bennett 0907 AQ Modeling Files.ZIP. Those files include:

BEN0907_yy_pp.ext modeling files, where
 yy = year from 86 to 90 for 1986 to 1990
 pp= PM_TEN, FORMALD, ACETALD, or BOILER for the pollutant modeled
 ext = DTA for AERMOD input files, and .LST for AERMOD output files

The runs with Boise meteorological data have BOImet appended to the model file names.

BEN 0907.* provides the BPIP Prime input and output files

SPRyyPRI.ext meteorological data files, where
 yy = year from 86 to 90 for 1986 to 1990
 ext = SFC for AERMET surface data files or PFL for AERMET upper air files

All files sufficient to duplicate AERMET and AERMAP preprocessor runs.